

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

1. (Currently Amended) A method for use in a Wideband Code Division Multiple Access (WCDMA) wireless communication system for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit to a remotely located second unit in said WCDMA wireless communication system, said signal being transmitted through an air interface and comprising pilot and data symbols, the method comprising:

verifying, by the first unit, a transmitted Transmit Power Control (TPC) command, by:

determining, by the first unit, when said TPC command has been correctly received, and

weighting, by the first unit, said pilot and data symbols wherein said weighting comprises taking into account a power change in said data symbols due to a prior TPC change; and

giving, by the first unit, a SIR estimation depending on the result of said TPC verification.

2. (Canceled)

3. (Previously Presented) The method according to claim 1, comprising encoding said data symbols using space-time transit diversity (STTD).

4. (Previously Presented) The method according to claim 1, wherein

Interference is estimated from said pilot symbols.

5. (Previously Presented) The method according to claim 4, wherein the estimated interference is filtered.

6. (Previously Presented) The method according to claim 1, wherein the first unit is a base station and the second unit is a mobile unit.

7. (Previously Presented) The method according to claim 1, wherein the first unit is a mobile unit and the second unit is a base station.

8. (Currently Amended) A device for estimating a signal to interference ratio (SIR) of a signal transmitted from a first unit and to a remotely located second unit in a Wideband Code Division Multiple Access (WCDMA) wireless communication system, said signal being transmitted through an air interface, wherein said device comprises:

a Transmit Power Control (TPC) verification means having an output signal, wherein said TPC verification means weighs said pilot and data symbols by taking into account a power change in said data symbols due to a prior TPC change and determines when said TPC command have been correctly received; and

a means for SIR estimation, using said output signal as input signal and being arranged to estimate the SIR depending on said output of said TPC verification unit.

9. (Canceled)

10. (Previously Presented) The device according to claim 8, wherein said data symbols are encoded using space-time transmit diversity (STTD).

11. (Previously Presented) The device according to claim 8, further comprising a means for estimating interference from said pilot symbols.

12. (Previously Presented) The device according to claim 11, further comprising a filter for filtering said estimated interference.

13. (Previously Presented) The device according to claim 8, wherein the first unit is a base station and the second unit is a mobile unit.

14. (Previously Presented) The device according to claim 8, wherein the first unit is a mobile unit and the second unit is a base station.

15. (Previously Presented) A computer readable medium having a plurality of computer-executable instructions for performing the method according to claim 1, comprising:

a program module for TPC verification giving instructions to a computer, and
a program module for SIR estimation giving instructions to a computer,
depending on the Transmit Power Control (TPC) verification.

16. (Currently Amended) The method according to claim 1, wherein said giving a SIR estimation depending on the result of said TPC verification comprises:
when said TPC command has been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{ml}} + w_2 P_2^{(n)}}{N^{(n)}} - 1$$

and when said TPC command has not been correctly received, the estimated SIR at time n is given as

$$SIR_{est}^{(n)} = \frac{w_3 P_3^{(n-1)} \cdot 10^{-0.1\Delta_{TPC}} + w_1 P_1^{(n)} \cdot 10^{0.1\Delta_{ml}} + w_2 P_2^{(n)}}{N^{(n)}} - 1 ; \text{ where}$$

$$w_i \geq 0, \text{ for } i = 1, \dots, 3, P_i^{(n)}$$

is the average received power for the symbol or a subset of symbols in interval $I_i^{(n)}$, $N^{(n)}$ is the estimated interference at time n , Δ_{TPC} is a change of power in dB, resulting from a prior TPC command, and Δ_{rel} is a relative power discrepancy between pilot and data symbols in dB.